

Commonwealth of Massachusetts
Department of Telecommunications and Energy
Fitchburg Gas and Electric Light Company
Docket No. D.T.E. 02-24/25
Record Request Response

Record Request No.: AG-RR-55 (Electric)

- a. Provide any incident reports regarding repairs to loose connections in Authorization 1068 Supplement. If the reports do not make it clear, explain who or what was responsible for the loose connections.
- b. Indicate any amounts included in the plant in-service for this construction authorization.

Response:

- a. No specific incident report was created regarding the repairs to the loose connections.

During the replacement of the of the no load tap changer on the power transformer at the Beech Street Substation, loose connections were found inside the transformer where the main winding leads connect to the barrier board. In order to correct this problem, the oil level within the transformer was lowered and all connections to this barrier board were tightened in accordance with the manufacturer's specifications.

The specific cause for these internal connections to be loose is not known. Probable causes include transformer vibration (60-cycle vibration) or cyclical heating and cooling of the transformer due to load and ambient temperature. Electrical connections are prone to loosening for these reasons. In particular, once a connection begins to loosen, the constant 60-cycle "hum" of a transformer will cause it to back off over time.

- b. The total amount included in plant in-service for this construction authorization is \$62,823. This includes the cost to replace the Load Tap Changer (LTC) and related activities. The specific cost to tighten loose connections was not separately tracked, and is included in the \$62,823. These costs are estimated at approximately \$1,387.

Person Responsible: Mark H. Collin